

Indian Point 3  
Nuclear Power Plant  
P.O. Box 215  
Buchanan, New York 10511  
914-736-8000



July 9, 1992  
IP3-NRC-92-042

Docket No. 50-286  
License No. DPR-64

Document Control Desk  
Mail Station PI-137  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Sir:

The attached Licensee Event Report LER 92-006-00 is hereby submitted in accordance with the requirements of 10CFR50.73. This event is of the type defined in the requirements per 10CFR50.73(a)(2)(ii)(A), 10CFR50.73(a)(2)(ii)(B), and 10CFR50.72(b)(2)(i).

Very truly yours,

A handwritten signature in cursive script, appearing to read 'J. E. Russell', written over a large, faint circular stamp.

Joseph E. Russell  
Resident Manager  
Indian Point Three Nuclear Power Plant

jer/ep/rj  
Attachment

cc: Mr. Thomas T. Martin  
Regional Administrator  
Region 1  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, Pennsylvania 19406

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PDR ADOCK 05000286  
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Indian Point Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 8 6	PAGE (3) 1 OF 0 5
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TITLE (4)  
125VDC System Lack of Coordination

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)			
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES			DOCKET NUMBER(S)
06	04	92	92	006	00	07	09	92				0 5 0 0 0
												0 5 0 0 0

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 0 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)						
	20.406(a)(1)(i)	50.38(a)(1)	50.73(a)(2)(v)	73.71(c)						
	20.406(a)(1)(ii)	50.38(a)(2)	50.73(a)(2)(vii)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	20.406(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	50.72(b)(2)(i)						
	20.406(a)(1)(iv)	<input checked="" type="checkbox"/> 50.73(a)(2)(iii) (A), (B)	50.73(a)(2)(viii)(B)							
20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)

NAME Thomas Klein, Manager Electrical Engineering	TELEPHONE NUMBER AREA CODE: 9 1 4 6 8 1 6 2 6 4
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14) <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15) MONTH:    DAY:    YEAR:
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On June 4, 1992, at 1530 hours, with the reactor defueled, a 125V DC Coordination Study identified a potential unanalyzed plant condition. Common and/or single mode failures in the 125V DC system could result in two of three emergency diesel generators (EDGs) being inoperable. The potential failure mechanism results from lack of coordination between DC distribution panel load breakers and DC power panel breakers. The root cause is an original plant design deficiency. Current Authority design and modification controls would prevent a recurrence of the design deficiency. A plant modification has been initiated to achieve coordination at the distribution panel level and for the eight affected power panel circuits through circuit breaker replacements, adding fuses and extending cable lengths. The modification will be completed prior to exceeding the cold shutdown condition.

FACILITY NAME (1)  Indian Point Unit 3	DOCKET NUMBER (2)  0 5 0 0 0 2 8 6	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 2	0 0 6	0 0	0 2	OF	0 5

TEXT (If more space is required, use additional NRC Form 366A's) (17)

INTRODUCTION (Reference Figure 1)

The 125V DC system is comprised of the following:

- \* Four (4) 125V DC lead acid batteries numbers 31-34
- \* Four (4) power panels (PP) numbers 31-34
- \* Six (6) distribution panels (DPs) numbers 31-34, 31A, 32A (31A and 32A are subpanels of 31 and 32 DPs)
- \* Five (5) battery chargers numbers 31-35 (35 is a spare)
- \* Four (4) static inverters numbers 31-34

DESCRIPTION

Deficiencies were identified as a result of the IP3 design basis reconstitution program, which includes the 125V DC Coordination Study. On May 26, 1992, four design deficiencies were identified for the IP3 125V DC system. An immediate assessment of the affect on safety equipment and systems was initiated.

1. Lack of short circuit protection
2. Lack of system coordination between power panels, circuit breakers and downstream protective devices (fuses or breakers)
3. Lack of system coordination between power panel circuit breakers and upstream fuses in the battery circuit
4. Insufficient DC interrupt rating for battery fuses.

On June 4, 1992, it was determined that these deficiencies could potentially result in de-energizing power panels PP31 and PP32, and distribution panels DP31 and DP32. DP31 and DP32 provide control power to EDGs 32 and 33 respectively. A loss of power to these panels would render the EDGs inoperable. A significant safety impact was identified and a Reasonable Assurance for Safety evaluation was initiated.

On June 4, 1992, the NRC was notified by control room operators as required by 50.72(b)(2)(i) four hour NRC notification. IP3 has three EDGs and assumes two are available in the accident analysis. This condition has existed from original plant construction.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Indian Point Unit 3	DOCKET NUMBER (2)  0 5 0 0 0 2 8 6	LER NUMBER (6)			PAGE (3)		
		YEAR 9 2	SEQUENTIAL NUMBER - 0 0 6	REVISION NUMBER - 0 0			
					0 3	OF	0 5

TEXT (If more space is required, use additional NRC Form 366A's) (17)

On June 10, 1992, the Reasonable Assurance of Safety (RAS 92-03-130) was completed to evaluate the reliability of the 125V DC system for the then current defueled condition in addition to refueling and maintaining cold shutdown conditions. The RAS concluded that opening circuit breakers to isolate affected circuits and restricting work on the system would ensure safety for the stated plant conditions.

On June 10, 1992, ten 125V DC breakers were opened to isolate potentially affected circuits and ensure availability of EDG 32 and 33.

The circuits were not required to support refueling or cold shutdown conditions. To minimize the risk of a fault on the distribution panels, controls on work inside control room panels were established on June 11, 1992. On June 12, 1992, at 0100 hours, refueling was commenced and completed on June 24, 1992 at 1900 hours.

A plant modification (92-03-129DC PWR) was approved on June 23, 1992 to provide for coordination through circuit breaker replacement, adding fuses, and extending cables.

The modification provides the following:

- \* Replace existing fuses for batteries 31 and 32 with new fuses having adequate interrupting rating and protection characteristics.
- \* Replace circuit breakers and/or install fuses for the affected circuits on power panels 31 and 32.
- \* Several new sections of cables were added to increase impedance to achieve coordination and reduce the available fault current at DC distribution panels 31, 32, 33, and 34.

The modification achieves coordination at the distribution panel level and for the eight affected power panel circuits.

FACILITY NAME (1)  Indian Point Unit 3	DOCKET NUMBER (2)  0   5   0   0   0   2   8   6	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9   2	-   0   0   6	-   0   0	0   4	OF	0   5

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Installation commenced on June 24, 1992, at 1030 hours. The modification and a Reasonable Assurance of Safety will be completed prior to the plant exceeding the cold shutdown condition.

CAUSE OF THE EVENT

The cause of the event was an original plant design deficiency.

CORRECTIVE ACTIONS

Current Authority design and modification administrative controls would prevent a recurrence of the design deficiency.

The following actions are completed:

A Reasonable Assurance of Safety was completed on June 10, 1992 to evaluate the reliability of the 125V DC system to support the then current defueled condition in addition to refueling, and cold shutdown conditions.

On June 10, 1992 ten 125V DC system circuit breakers were opened to isolate potentially affected circuits and ensure availability of EDG 32 and 33.

On June 11, 1992 controls were established to limit work inside control room panels to minimize the risk of a fault on the distribution panels.

Corrective actions to be completed are:

A plant modification was developed to provide for coordination through circuit breaker replacement, adding fuses, and extending cable length to increase impedance. Installation will be completed prior to exceeding cold shutdown condition.

FACILITY NAME (1)  Indian Point Unit 3	DOCKET NUMBER (2)  0   5   0   0   0   2   8   6	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9   2	-   0   0   6	-   0   0	0   5	OF	0   5

TEXT (If more space is required, use additional NRC Form 366A's) (17)

A Reasonable Assurance of Safety to evaluate the reliability of the 125V DC system for exceeding cold shutdown is in progress.

The Authority is continuing to assess for long term system improvements to enhance system reliability.

ANALYSIS OF THE EVENT

This event is reportable under 10CFR50.73(a)(2)(ii)(A). The plant was in a condition that was outside the design basis of the plant since original construction. Two of three EDGs could be considered to be inoperable for not having met full qualification of their control power. The event is also reportable under 10CFR50.73(a)(2)(ii)(B). IP3 Technical Specification Section 3.7.F requires two EDGs under all conditions.

No threat to public health occurred as a result of this event. A postulated event would be mitigated by the availability of redundant power supplies.

SECURING FROM THE EVENT

On June 10, 1992 a Reasonable Assurance for Safety evaluation verified the reliability of the 125V DC system for defueled, refueling, and cold shutdown. Ten circuit breakers on the 125V DC system were opened to ensure diesel generator availability on June 10, 1992. Refueling was commenced on June 12, 1992 at 0100 hours and completed on June 24, 1992 at 1900 hours.

# 125 VDC DISTRIBUTION

